UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,406	05/30/2006	Henry Alexander	55928.00003/401P07PCT-US	5601

29880 7590 07/22/2009

FOX ROTHSCHILD LLP
PRINCETON PIKE CORPORATE CENTER
2000 Market Street
Tenth Floor
Philadelphia, PA 19103

EXAMINER	
CHEU, CHANGHWA J	
ART UNIT	**PAPER NUMBER**
1641	

MAIL DATE	DELIVERY MODE
07/22/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/559,406	ALEXANDER ET AL.	
	Examiner	Art Unit	
	JACOB CHEU	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 May 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *22-36* is/are pending in the application.

4a) Of the above claim(s) *29-34* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *22-28,35 and 36* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group I, claims 22-28 in the reply filed on 5/29/2009 is acknowledged. Claim 36 is added. Claims 1-21 have been cancelled.

2. Claims 22-36 are pending. Claims 29-34 have been withdrawn.

3. Claims 22-28 and 35-36 are under examination.

4. Currently, no Information Disclosure Statement is provided.

Drawings

5. It is noted that Figure 1 is not provided, albeit Applicant describes the content of Figure 1 in the specification. Applicant needs to resubmits Figure 1 coupled with a statement indicating Figure 1 is the same as original filed and no new matter is added.

Sequence

6. SEQ ID No 2. There is typo with respect to the description on this particular sequence. The parenthesis " (t?hCG)" is not clear what it means. Please correct it.

Claim Objections

7. Claims 22, 23, 24, 26-28 and 35 are objected to because of the following informalities:

With respect to claim 22, it is suggested that Applicant clarifies what kind of samples, e.g. pregnancy women, are used in the current method.

With respect to claim 22, it is suggested that Applicant places SEQ ID 10 after (e-beta hCG/ehCG) for clarity (**see below**). Similarly, it is suggested to place SEQ ID for the non-trophoblastic hCG for clarity. Similarly the same should be applied to claims 24, 28 and 35.

With respect to claim 23, it is suggested to place SEQ ID for the trophoblastic hCG for clarity. Note, type I and type II are different protein.

With respect to claim 24, it is suggested Applicant recites "using" at least one antibody that recognizes specific endometrial hCG. Similarly, claim 35 is suggested modifying the same.

With respect to claim 24, line 4, "endometrial hCG" should be "human endometrial hCG" for consistency (See claim 22). Similarly, claims 26-27 suffer the same problem.

With respect to claim 35, it is suggested to delete the last wordings for redundancy- "is used".

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 22-28 and 35-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claim 22, it is not clear what constitutes "modification" in the instant specification. There is no definition in the specification.

With respect to claim 22, the term (eβhCG/ehCG) is not clear. It is not clear whether one should determine eβhCG subunit or ehCG. Please clarfy. Similarly, it seems that Applicant intends to recites Markush group for hCG (hCG type I, β6, β7). Please clarify.

With respect to claim 22, the preamble is not consistent with the outcome of the recited method. The preamble is "determining defined states or modifications in the *mucus*

membrane of the uterus or in the epithelium of other organs" whereas the conclusion of the active steps recited in the claim 22 does not reflect the preamble.

With respect to claim 22, it is not clear what are the relationships of the non-trophoblastic hCG (type I, beta 6-7) with the state or modifications in the uterus. What kind of role do they play? It is not reflected in the recited method.

With respect to claim 22, it is not clear what "receptiveness" means in the context of the claim. Does it mean for embryo implantation? Please specify.

With respect to claim 22, it is not clear what "other organs" Applicant refers to. Particularly, there is no metes and bounds with regard to this term. Moreover, such recitation lacks nexus between active steps and any particular changes of epithelium organs. Please specify.

With respect to claim 22, the phrase "wherein expression of eβhCG/ehCG signals receptiveness of the endometrium for a fertilized egg or signals an undisturbed pregnancy"" compared with the following phrase "wherein a reduction of expression of eβhCG/ehCG in a pregnant woman with a healthy pregnancy signals a dysfunction of the endometrium or …" is confusing. It is not clear any compatibility between "undisturbed pregnancy" and "dysfunction of endometrium". Please clarify.

With respect to claim 23, it is not clear what is the difference between the trophoblastic hCG (…tβhCG) or total βhCG. Or doe this step measure type II hCG? Please clarify.

With respect to claim 26, trophoblastic hCH or total beta hCG or total hCG lack antecedent basis.

With respect to claim 28, it is not clear whether this hCG is the same as the human endometrial hCG since the human endometrial hCG is the main invention in this

application. Please clarify it. Also, claim 28 suffers the same problem as that of claim 22 for lack nexus of preamble with the active steps. What is relationship of the concentration of the hCG with the state or modification of the uterus or other organ.

With respect to claim 36, it is not a complete recitation of method claim. There is no connection between the preamble with the active steps. Particularly, there is no conclusion following the active steps. Please clarify.

Claim Rejections - 35 USC § 112

10. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

11. Claims 22-28 and 35-36 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As set forth in *In re Wands, 858 F .2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988*), enablement requires that the specification teach those skilled in the art to make and use the invention without undue experimentation. Factors to be considered in determining, whether a disclosure would require undue experimentation include 1) the nature of the invention, 2) the state of the prior art, 3) the predictability or lack thereof in the art, 4) the amount of direction or guidance present, 5) the presence or absence of working examples, 6) the quantity of experimentation necessary, 7) the relative skill of those in the art, and 8) the breadth of the claims.

The invention concerns a method and means for determining specific conditions or changes in the uterus. Conditions of the uterine epithelium that are to be determined in particular by the

invention are the receptivity of the endometrium for the implantation of an embryo. The field of application is medicine, particularly gynecology and oncology.

First, it is noted that Applicant recites "the epithelium of other organs" in the claim language. Applicant refers to the changes of "epithelium of other organs" to neoblastic or tumor changes (See Section 0013 and 0050). In view of the claim language, such assertion does not have sufficient support from the specification. Particularly, there is no clinical data presented in this application. Further, there lacks nexus between the changes of epithelium of other organs and any recited active step. Although at the end of the claim 22, Applicant recites several pathological abnormalities, including dysfunction of the decidua, miscarriage, intra-uterine growth retardation, preeclampsia or premature birth, it is not clear that all the aforementioned diseases are "changes of epithelium of other organs".

Furthermore, Examiner has carefully reviewed the specification and can not find any clinical data which would allow one artisan in the field to determine a correlation of the concentration of ehCG and the state of uterus *with other organs* (emphasis added). It is known that the instant claimed methods are focused in the field of fertility embryology which requires tremendous scientific disciplines and scrupulous peer evaluation. According to what has been disclosed in the specification, the knowledge, methodology and scope of the instant method involve not only embryology, but also include physiology, immunology, pathology and clinical treatment. Applicant merely states "other organ" yet without any concrete evidence in support. In view of the aforementioned lack of predictability in the art, undue experimentation would be required to practice the claimed methods with a reasonable expectation of success, absent a specific and detailed description in the applicant's specification of how to effectively practice the recited method and absent working examples.

Furthermore, as has been discussed above, there is no supporting clinical data verifying what has been asserted in the instant claimed method. As held in *Brenner v. Manson*, "[a] patent is not a hunting license. It is not a reward for the search, but compensation for its successful conclusion." See 383 U.S. 519, 536 (1966). Based upon the instant *disclosure* (emphasis added), it appears that the hypothesis, materials, and methods are ready for one in the field to take action and *further to verify* such hypothesis (emphasis added). It appears that the crucial

step, i.e. "reduced to practice" is on the way. Nevertheless, the Office needs more tangible and concrete evidence to substantiate this hypothesis.

Claim Rejections - 35 USC § 102

12. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

13. Claim 36 is rejected under 35 U.S.C. 102(a) as being anticipated by Zimmermann et al. (Molecular Human Reproduction 2003 Vol. 9, page 81-89).

As has been discussed above, the instant claim language lacks nexus in connecting with the preamble and active steps. Thus, the instant claim is interpreted as simply measurement of any one of the recited endometrial chorionic gonadotropin.

Zimmermann et al. teach measuring the βhCG in the patients (see abstract; and Figure 1-3 and Table 1).

14. No claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JACOB CHEU whose telephone number is (571)272-0814. The examiner can normally be reached on 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Shibuya can be reached on 571-272-0806. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jacob Cheu/
Examiner, Art Unit 1641